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ABSTRACT

Explores impacts on length of time to completion of an associate's degree by variables such as a student's high school GPA, college placement status, transfer credits from other institutions, enrollment status, major, sex, ethnicity, and age. The study also outlines a systematic and comprehensive model for determining the extent to which these factors influence the length of time it takes to earn a degree. The sample is drawn from a college within the Collin County Community College District and includes Associate of Arts (AA), Associate of Science (AS), and Associate of Applied Science (AAS) degree recipients from fiscal years 1986 to 2002. In addition to summarizing the demographic background of participants, the author outlines the procedures for developing a structural equation model used to identify factors that affect the length of time to degree. The study found it took an average of over four years for students to obtain their associate's degree and there were no significant differences between male and female graduates or among the graduates from different ethnic groups. Other significant findings are presented in the report. (RC)

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EXAMINING THE LENGTH OF TIME TO COMPLETION AT A COMMUNITY COLLEGE

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ABSTRACT

It is unclear what factors affect the length of time that students need to complete and earn an associate's degree at community colleges. This study seeks to explore impacts on length of time to completion, by such variables as a student's high school GPA, college placement status, transfer credits from other institutions, enrollment status, major, sex, ethnicity, and age. The study also intends to develop a systematic and comprehensive model to determine the extent to which these factors interact and influence the length of time it takes for community college students to complete their degrees.

EXAMINING THE LENGTH OF TIME TO COMPLETION AT A COMMUNITY COLLEGE

Timely graduation has been used as one of the indicators of the performance of colleges and universities. Federal reporting requires that potential students be informed of the percentage of first-time freshmen who graduate within 150 percent of normal completion time so that they can make more informed decisions about which college to attend. Community colleges have been praised for their democratic access to higher education (Vaughan, Templin 1987; Griffith & Connor, 1994) by serving as initial points of entry into college for first-time students. However, the graduation rate within normal completion time (2 years) is low. Only 7.3 percent of the students who started their higher education at two-year colleges during 1995-1996 academic-year received an associate's degree by Spring 1998 (Digest of Education Statistics, 2001).

To gain greater understanding of the factors underlying persistence toward a degree, researchers have turned to tracking students from admission (Holton, 1998) and creating models to predict completion (Kaliszeski, 1998; Widlak, 1997; Wyman, 1997). Some researches have studied the length of time to graduation for community college students who transfer to four-year universities (e.g., Gao, 2002). However, very few studies have been conducted to examine how many years that community college students need in order to graduate with an associate degree. Recently, Floyd (2002) examined the average time to completion at a South Carolina urban community college and found that it took 4.2 calendar years for a graduate to complete an associate degree. Only 37.4 percent of the sample, including the graduates who had transferred credit hours to the college, completed their degrees within 150 percent of normal time (three calendar

years) as defined by The Integrated Postsecondary Education Data System (IPEDS). Additional study is needed in this area if we are to understand how long it takes for associate's degree attainment and why it takes so long.

This study attempts to examine the impact of student demographic characteristics (e.g., sex, ethnicity, age, in/out of state, citizenship, and transfer status) on the length of time needed for students to complete an associate's degree. The main purpose of the study is to develop a structural equation model to examine intercorrelations among factors, such as student demographic information, academic preparedness (e.g., developmental education), course load, and academic performance and explore to what extent these factors affect time to completion.

Research question

By examining data extracted from one college's student information system, this study explores the following research questions.

1. Do graduates' demographic characteristics (e.g., sex, ethnicity, in/out-of-state, citizenship, transfer status, and number of fall/spring terms the graduates did not enroll), affect the length of time it takes for a graduate to receive an associate's degree?
2. What are the interactions among graduate age, academic preparedness, course load, academic performance, and the length of time students spent finishing an associate's degree?

Sample and Preliminary Analyses

The sample for this study is drawn from Collin County Community College District (CCCCD). The College is a two-year suburban college with around 16,000 students enrolled in fall semester. Associate of Arts (AA), Associate of Science (AS), and Associate of Applied Science (AAS) degree recipients from fiscal year 1986, the College's inception, to fiscal year 2002 are selected. Data providing information needed for this study were extracted from the college's student information system. Among 4,760 associate's degree recipients, or graduates as called in the study, 65 of them completed two degrees and two of them completed three degrees. This study focuses on first time award recipients excluding additional time those multiple award recipients spent attaining second or third awards. About 52 percent of the graduates received AA awards (N=2,451), 19 percent received AS awards (N=893), and 30 percent were awarded AAS degrees (N=1,416). Time to completion in this study is defined as the raw calendar time lapsed between the first time the student enrolled at the College and the date they received an associate's degree.

Table 1 displays demographic information of the sample. There were more female award recipients (66.9%) than male (33.1%) and most of them were white (86.2%) and from in state (Texas). When these sampled graduates entered the College, seventy-three percent of them were under 30-years old.

The Texas State Education Code requires that all students "...who entered public institutions of higher education in the fall of 1989 and thereafter be tested prior to enrollment" by the Texas Academic Skills Program (TASP), a test in reading, writing and mathematics required of most students taking college-level courses at a public college in

Texas. Students who are subject to the TASP requirement must either pass all three sections of the TASP or enroll in remedial coursework before enrolling in college-level coursework related to any deficiencies identified by the test. The vast majority of graduates in this study had not completed their TASP obligation when they first enrolled at CCCCD (94.3%).

Table 1

Student Demographic Characteristics

		N	%
Sex			
	Female	3,185	66.9
	Male	1,575	33.1
Ethnicity			
	White, Non-Hispanic	4,105	86.2
	African American	171	3.6
	Hispanic	261	5.5
	Asian	165	3.5
	Other	58	1.2
Original State			
	Texas	4,483	94.2
	Out-of-State	108	2.3
	International Students	169	3.6
Entering Age			
	Under 18	712	15.0
	18-22	1,911	40.1
	23-29	912	19.2
	30-35	561	11.8
	36-40	344	7.2
	41and Over	320	6.7
Initial TASP Status			
	Not Taken	4,271	89.7
	Failed	217	4.6
	Passed	259	5.4
	Waived/Exempted	13	0.3

Analyses and Findings

Appendix I lists a correlation matrix of all the variables involved in the study. Descriptive statistics wer examined to determine the length of time it takes for the graduates to complete their degrees. As shown in Table 2, the minimum years taken to complete an associate's degree was less than half a year (.328) and the maximum was more than sixteen (16.739). The average length of time-to-completion was 4.3 years (SD = 2.681), which is 115% longer than normal two-year completion time.

Table 2

Descriptive Statistics of Time-to-Completion

	N	*Minimum*	*Maximum*	*Mean*	*Std. Deviation*
Time-to-Completion (Year)	4,760	0.328	16.739	4.304	2.681

In Table 3, less than one-fifth of the graduates completed an associate's degree within two years (18.8%) and less than half (41.1%) completed within 150% of normal completion time (three years), while almost 60 percent of the graduates needed more than three years to complete (58.9%). The time-to-completion was slightly shorter for first-time full-time freshmen, but still less than half of them graduated within 150% of normal completion time (45.2%).

Table 3

Time-to-Completion for First-Time Full-Time Freshman Graduates and All Graduates

Time-to-Completion	First-Time Full-Time Freshman Graduates		All Graduates	
	N	Cumulative %	N	Cumulative %
Within 2 years	223	17.1%	895	18.8%
Within 3 years	591	45.2%	1,955	41.1%
Within 4 years	847	64.8%	2,811	59.1%
Within 5 years	1,003	76.7%	3,401	71.4%
Within 6 years	1,098	84.0%	3,805	79.9%
More than 7 years	1,164	89.1%	4,080	85.7%
7 years or longer	1,307	100.0%	4,760	100.0%

To explore whether student demographic characteristics (e.g., sex, ethnicity, citizenship, or transfer status) affected the length of time it took for a graduate to earn an associate's degree, crosstabulations, comparisons of means, and Kruskal-Wallis H tests were examined. Kruskal-Wallis H test determines whether the population distributions from which the samples were selected are the same (Hinkle, Wiersma, & Jurs, 1996, p.566). It is an appropriate statistical method to test mean differences of an interval dependent variable by a categorical independent variable. In this study, the Kruskal-Wallis H test was used to examine the mean differences of time-to-completion among different groups of graduates grouped by different demographic characteristics (e.g., sex, ethnicity, age, entering status, original state, and citizenship). Chi-square, degrees of freedom, and significance level were reported to show the results of the test.

Slightly higher percentages of male graduates completed their associate's degrees within 150% normal completion time (42.0%) than female students (40.6%), as shown in Table 4. Meanwhile, male graduates had slightly shorter mean of time-to-completion

(mean = 4.298, SD = 2.691) than female graduates (mean = 4.307, SD = 2.677). However, the difference in the means of time-to-completion between male and female graduates was neither substantial nor statistically significant (Sig =. 660).

Table 4

Crosstabulation, Means Comparison, & Kruskal-Wallis H Test Time-to-Completion by Sex

Time-to-Completion	*Male*		*Female*	
	N	*Cum %*	*N*	*Cum %*
Within 2 years	296	18.8%	599	18.8%
Within 3 years	661	42.0%	1,294	40.6%
Within 4 years	935	59.4%	1,876	58.9%
Within 5 years	1,128	71.6%	2,273	71.4%
Within 6 years	1,249	79.3%	2,556	80.3%
Within 7 years	1,341	85.1%	2,739	86.0%
More than 7 years	1,575	100.0%	3,185	100.0%
Mean/Std. Deviation	4.298/2.691		4.307/2.677	
Chi-Square/df	.193/1			
Sig	.660			

As shown in Table 5, Asian graduates had the shortest mean time-to-completion (mean = 3.743, SD = 1.800) followed by Hispanic graduates (mean = 4.042, SD = 2.276), African American graduates (mean = 4.308, SD = 2.738), White non-Hispanic graduates (mean = 4.337, SD = 2.725), and graduates of other ethnicities (mean = 4.711, SD = 2.965). The Kruskal-Wallis H test shows that the differences in the means of time-to-completion among these different ethnic groups were not statistically significant (Sig = .384).

Table 5

Crosstabulation, Means Comparison, & Kruskal-Wallis H Test Time-to-Completion by Ethnicity

	White, Non-Hispanic		*African American*		*Hispanic*		*Asian*		*Other*	
Time-to-Completion	*N*	*Cum %*	*N*	*Cum %*	*N*	*Cum %*	*N*	*Cum %*	*N*	*Cum %*
Within 2 years	783	19.1%	32	18.7%	41	15.7%	29	17.6%	10	17.2%
Within 3 years	1,671	40.7%	76	44.4%	113	43.3%	72	43.6%	23	39.7%
Within 4 years	2,405	58.6%	105	61.4%	165	63.2%	108	65.5%	28	48.3%
Within 5 years	2,917	71.1%	124	72.5%	198	75.9%	126	76.4%	36	62.1%
Within 6 years	3,269	79.6%	133	77.8%	215	82.4%	148	89.7%	40	69.0%
Within 7 years	3,499	85.2%	143	83.6%	231	88.5%	158	95.8%	49	84.5%
More than 7 years	4,105	100.0%	171	100.0%	261	100.0%	165	100.0%	58	100.0%
Mean/Std. Deviation	4.337/2.725		4.308/2.738		4.042/2.276		3.743/1.800		4.711/2.965	
Chi-Square/df	4.167/4									
F/Sig	.384									

It is not surprising to find that the graduates entering the College as first-time-in-college students had longer mean time-to-completion (mean = 4.547, SD = 2.569) than those who had attended other colleges or universities before attending CCCCD (mean = 4.103, SD = 2.755). While almost 46 percent of the graduates attended other colleges or universities before completing their degrees within three years (45.7%), less than 36 percent of graduates who were first-time-in-college students completed within three years (35.5%). The mean time-to-completion difference between these two groups of graduates was significant (Sig = 0.000).

Table 7

Crosstabulation, Means Comparison, & Kruskal-Wallis H Test Time-to-Completion by Entering Status

	First-Time in College		*Other*	
Time-to-Completion	*N*	*Cum %*	*N*	*Cum %*
Within 2 years	251	11.6%	644	24.7%
Within 3 years	765	35.5%	1,190	45.7%
Within 4 years	1,180	54.7%	1,631	62.6%
Within 5 years	1,490	69.1%	1,911	73.4%
Within 6 years	1,688	78.3%	2,117	81.3%
Within 7 years	1.830	84.9%	2,250	86.4%
More than 7 years	2,156	100.0%	2,604	100.0%
Mean/Std. Deviation	4.547/2.569		4.103/2.755	
Chi-Square/df	79.047/1			
Sig	0.000			

Table 8 shows that almost 60 percent (59.9%) of the graduates who continuously enrolled completed within three years. Less than 24 percent (23.8%) of the graduates who discontinued enrollment for one or two fall or spring terms completed within three years. For the graduates who discontinued enrollment for three or four fall or spring terms, an average of more than five years (mean = 5.568, SD = 1.972) were required for completion. The mean time-to-completion differences were significant (Sig = .000) among the graduates with different degrees of continuity in their enrollment histories.

Table 8

Crosstabulation, Means Comparison, & Kruskal-Wallis H Test Time-to-Completion by Number of Not Enrolled Fall/Spring Terms

	Enrolled All Terms		*Not Enrolled 1 or 2 Terms*		*Not Enrolled 3 or 4 Terms*		*Not Enrolled 5 or 6 Terms*		*Not Enrolled 7 or More Terms*	
Time-to-Completion	*N*	*Cum %*	*N*	*Cum %*	*N*	*Cum %*	*N*	*Cum %*	*N*	*Cum %*
Within 2 years	848	28.9%	45	5.9%	2	0.6%	0	0	0	0
Within 3 years	1,758	59.9%	181	23.8%	15	4.3%	0	0	0	0
Within 4 years	2,345	79.9%	365	48.0%	88	25.4%	11	4.8%	1	0.2%
Within 5 years	2,667	90.9%	522	68.7%	156	45.1%	46	19.9%	9	1.8%
Within 6 years	2,828	96.4%	626	82.4%	221	63.9%	96	41.5%	33	6.7%
Within 7 years	2,885	98.3%	686	90.3%	280	81.0%	146	63.1%	82	16.7%
More than 7 years	2,931	100.0%	760	100.0%	346	100.0%	231	100.0%	492	100.0%
Mean/Std. Deviation	3.044/1.481		4.486/1.879		5.568/1.972		6.823/2.139		9.466/2.445	
Chi-Square/df	2171.774/4									
F/Sig	.000									

According to Table 9, higher percentages of the graduates from out-of-state (Texas) had completed within two years (32.5%), three years (66.4%), and four years (85.6%) than in-state graduates (18.0%, 39.5%, 57.4%, respectively). The mean of time-to-completion for the in-state graduates (mean = 2.953, SD = 1.679) was significantly longer (Sig = 0.000) than for out-of-state graduates (mean = 4.388, SD = 2.709).

Table 9

Crosstabulation, Means Comparison, & Kruskal-Wallis H Test Time-to-Completion by Original State

	In State		*Out-of- State*	
Time-to-Completion	*N*	*Cum %*	*N*	*Cum %*
Within 2 years	805	18.0%	90	32.5%
Within 3 years	1,771	39.5%	184	66.4%
Within 4 years	2,574	57.4%	237	85.6%
Within 5 years	3,147	70.2%	254	91.7%
Within 6 years	3,545	79.1%	260	93.9%
Within 7 years	3,816	85.1%	264	95.3%
More than 7 years	4,483	100.0%	277	100.0%
Mean/Std. Deviation	4.388/2.709		2.953/1.679	
Chi-Square/df	99.471/1			
Sig	0.000			

To answer the second research question, what the interactions among graduates' demographic characteristics, academic preparedness, course load, academic performance, and the length of time students spent finishing an associate's degree are, the study developed a structural equation model to identify factors that affect the length of time that students need to complete associate's degrees and to explore relationships among those factors. We used structural equation modeling (SEM) to test the models assessing the relationships among the factors. Specifically, SEM provides the flexibility to: (a) model relationships among multiple predictor and criterion variables, and (b) statistically test a priori substantive/theoretical and measurement assumptions against empirical data (Schumacker and Lomax, 1996; Chin, 2001).

LISREL (version 8.52), a statistical program for visual structural equation modeling, tested a structural equation model. The structural equation model includes

observed variables, which are indicators to latent variables, represented by rectangles or squares, latent variables represented by ellipses, and error terms (i.e., measurement errors and equation errors) represented by small arrows. The following relationships are depicted by straight lines (i.e., with an arrow at only one end): (a) the structural coefficients that relate the latent variables to one another, (b) the regression coefficients that relate the latent variables to their observed variables, (c) the relationships between the measurement errors and their observed variable, and (d) the relationships between the equation prediction errors and their respective latent dependent variables. Graphically, a structural equation model is depicted as consisting of two components: a structural model, which defines how the latent factors/variables are related to one another, and a measurement model, which defines how the factors are measured or operationalized.

SEM should not be used to test models by using correlation or covariance matrix that mix interval variables and categorical variables (e.g., Pedhazur, 1996, p771). Therefore, the model in this study as shown in Figure 1, only uses interval scaled variables. Usually, multiple indicators measure a latent variable. However, this study attempted to examine whether graduates' entering age had impact on time-to-completion. Therefore, we used graduates' entering age as the only one indicator of the latent variable, Entering Age. For the same reason, number of years that graduates spent on completion was used as the indicator of the latent variable, Time to Completion. In using a single indicator to assess a latent variable, it is assumed that no measurement error is associated with the measurement of that latent variable (Lomax, 1997, p.79). In this study, we assumed that Entering Age and Time to Completion are perfectly measured by their single indicator. The model includes another three latent independent variables:

Academic Preparedness is measured by numbers of developmental math, English or other courses that graduates had taken; Academic Performance is measured by first fall/spring term GPA and cumulative GPA at the College; Course Load is measured by numbers of courses taken in first fall/spring term and average numbers of courses taken in fall/spring terms; and TASP performance is measured by TASP math, reading and writing scores. The structural equation model contains path diagrams from latent independent variables, as described above, to the latent dependent variable Time to Completion. Table 10 provides a description of the indicators of latent variables.

Table 10

Descriptive Statistics of the Indicators of Latent Variable

	N	*Minimum*	*Maximum*	*Mean*	*Std. Deviation*
Entering age	4760	14	71	25.194	8.568
Developmental Math course count	4760	0	10	2.060	1.587
Developmental English course count	4760	0	8	0.365	0.806
Developmental other course count	4760	0	11	0.201	0.920
Number of courses taken in first Fall/Spring term	4759	0	8.333	2.476	1.467
Average number of courses taken in Fall/Spring Terms	4759	1	8.25	3.245	1.173
First Fall/Spring term GPA	4397	0	4	3.252	0.729
Cumulative GPA	4760	1.346	4	3.260	0.477
TASP Math	4760	230	300	262.272	13.280
TASP Reading	4760	230	300	265.552	12.548
TASP Writing	4760	220	300	247.971	14.219
Time to completion	4760	0.328	16.739	4.304	2.681

We developed a measurement model indicating latent variables and their indicators, while without paths among latent variables, as shown in Figure 1. To avoid a model being under-identified, we started a simple structural model, as suggested by Lomax (1997, p101), by drawing paths from four latent independent variables to the

latent dependent variable, Time-to-Completion. When the model was identified, we then added reasonable paths as suggested by LISREL.

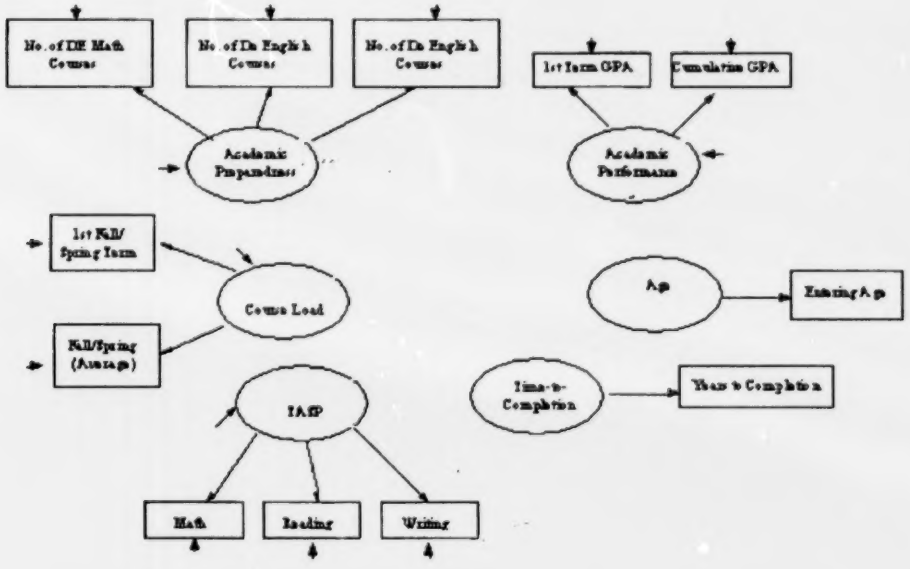

Figure 1. A Measurement Model of Time-to-Completion.

We used Chi-square and goodness of fit indices to arrive at the "best" model. The goodness-of-fit index (GFI), which is interpreted similarly to a correlation coefficient in terms of desirable values, is considered a reasonable statistic for this purpose because the chi-square statistic is easily distorted by large sample sizes (Fassinger, 1987; Loehlin, 1998; Lomax, 1997), as in this study. The adjusted goodness-of-fit index (AGFI) is the goodness-of-fit index adjusted for degrees of freedom. We also used a population-based model fitness index called Root Mean Square Error of Approximation (RMSEA), which has been widely accepted by researchers because it is less sensitive to large sample sizes. Evaluative standards for interpretation of the GFI and AGFI are not empirically determined because statistical distributions, hence probability values, for these indexes are unknown. GFI values above.90 and AGFI values above .80, however, are often cited

as criteria for acceptable fit (e.g., Kenny, Milanen, Lomax, & Brabeck, 1993; Long, Kahn, & Schutz, 1992; Quintana & Lapsley, 1987; Schumacker & Lomax, 1996). A value of the RMSEA of about .05 or less indicates a close fit of the model (Loehlin, 1998; Browne & Cudeck, 1993).

Table 10

Model Fit Measure

Fit Measure	*Value*
Chi-Square	215.848
Degrees of freedom	37
P for test of close fit	0.000
GFI	0.993
Adjusted GFI	0.983
RMSEA	0.032
RMSEA lower bound	0.028
RMSEA upper bound	0.036
P for test of close fit	1.000

Figure 2 displays the structural model finally adopted. The Chi-square, GFI, AGFI, and RMSEA are presented in Table 10. GFI (.993), AGFI (.983), and RMSEA (0.032 with P = 1.000) suggest that the model provides a reasonable fit to the data, although the overall chi-square is significant (171.80 with P = .000). Appendix II lists the covariance matrix that was analyzed by LISREL.

The model, as shown in Figure 2, displays factor loadings from indicators to latent variables and estimates of path coefficients among latent variables and an asterisk that indicates a significant path at 0.01 level.

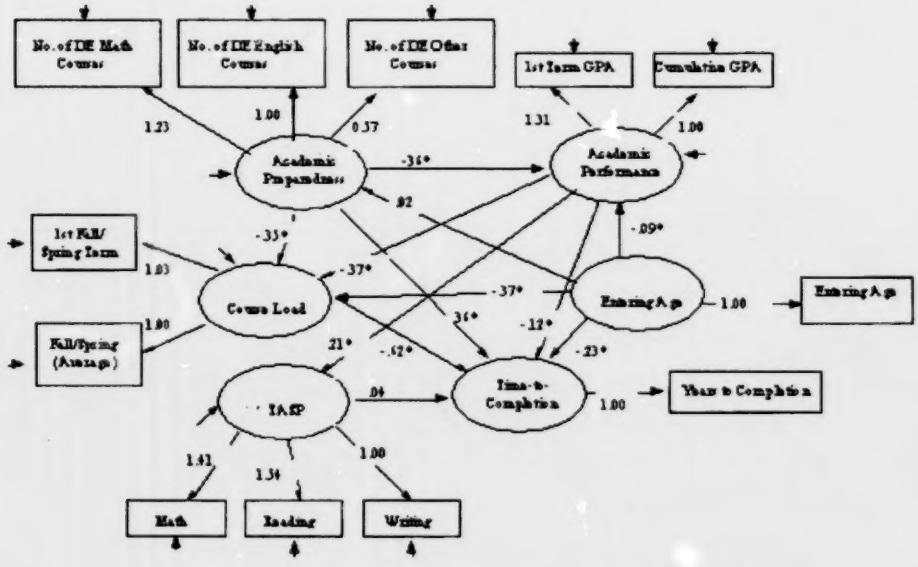

Figure 2. A Structural Equation Model of Time-to-Completion with Factor Loadings and Path Coefficients.

A latent independent variable with a larger path coefficient (absolute value) contribute more to the latent dependent variable. Examining the path coefficients among latent variables in the structural equation model as shown in Figure 2, we found Course Load (-.62), Academic Preparedness (.36), Academic Performance (-.12), and Entering Age (-.23) had significant impacts on Time-to-Completion while TASP was not a significant factor (.04). Forty-four percent of the variances of Time-to-Completion are explained by these five latent independent variables. We noticed that the path coefficients from Course Load, Academic Performance, and Entering Age to Time-to-Completion were negative but the path coefficient from Academic Preparedness was positive. That means that a graduate took the more courses in Fall/Spring term, the better performed academically, or was younger, the graduate was more likely to complete in shorter time,

while the more developmental courses a graduate took the longer time the graduate would need to complete.

The structural equation model also enables us to explore the interrelationships among other latent variables than Time-to-Completion. Academic Preparedness and Entering Age had significant negative effect (-.36, -.09 respectively) on Academic Performance. Academic Preparedness had the most negative effect (-.35) on Course Load, followed by Entering Age (-.37) and Academic Performance (-.37). The effect of Entering Age (.02) on Academic Preparedness was not significant. Academic Performance had significant effect (.21) on TASP.

Summary of Findings

This study found that it took an average of over four years (4.3) for CCCCD graduates to obtain an associate's degree. Fewer than half the graduates (41.1%) completed within 150% of normal time, three years. Few than half of the graduates who entered the College as first-time full-time freshmen (45.2%) completed within 150% of normal time. About 36 percent of the graduates who entered as first-time-in-college (35.5%) completed within 150% of normal time.

There were no significant mean time-to-completion differences between male and female graduates or among the graduates from different ethnic groups. Out-of-state graduates completed in less time than in-state graduates. The graduates who started an associate program at younger ages completed in less time. Most graduates who did not stop out and enrolled every fall and spring term (59.9%) completed within 150% of normal time.

Time-to-completion was highly affected by how many courses graduates took in fall or spring terms. How well a graduate was academically prepared for college had impact on time-to-completion. The better the grades a graduate received, the shorter the time he/she needed to complete. Younger graduates likely would need less time-to-completion.

This study suggested that most graduates in the sample of the study did not complete and earn an associate's degree within normal time. However most the graduates who did not stop out completed within 150% of normal time. The structural equation model also suggested that the average number of courses a graduate took in fall and spring term was the factor contributing most to time to completion. Graduates tended not to complete in a timely manner mostly because they stopped out or enrolled few courses.

Significance and Limitations of the Study

This study examines the time to completion that students need at a community college and identifies factors that affect the length of time that it takes for students to earn an associate's degree. The significance of the study also lies in developing and testing a systematic and comprehensive model to determine the extent to which those factors interact and influence the length of time to completion for community college students and to propose constructive recommendations for administrators in the community colleges.

The population of the study was predominantly white non-Hispanic (86.2%). The study is also limited because of the data availability. There are empirical studies indicating a strong positive correlation between educational attainment (e.g., enrollment, persistence, and graduation) and student background such as family income (Kane, 1994;

Manski & Wise, 1983), number of dependents other than one's spouse (Horn & Premo, 1995), and high school GPA or Rank (Spady, 1970; DesJardins, Ahlburg, & McCall, 2002). Further study should explore the impacts of the above-mentioned factors on time-to-completion.

Reference:

Digest of Education Statistics, 2001. National Center for Educational Statistics. http://nces.ed.gov/pubs2002/digest/

Floyd, N. D. (2002). So how long have you been here? Using retrospective transcript data to examine time to completion at a community college. Paper presented at the 42nd Annual Forum of the Association for Institutional Research, Toronto.

Griffith, M., & Connor, A. (1994). Democracy's open door: the community college in America's future. Portsmouth, NH: Boynton/Cook.

Holton, J. M. (1998). Whatever happened to the class of 1994? A three-year longitudinal study of traditional freshmen entering Frederick Community Colleges in the Fall 1994 semester. Frederick, MD: Frederick Community College. (ERIC Document Reproduction Service: No. ED419568).

Kaliszeski, M. S. (1998). Clar's "cooling out" concept as a factor in student completion of community college programs. Graduate seminar paper, University of Florida. (ERIC Document Reproduction Service: No. ED290512).

Vaughan, G.B., & Templin, R. G. (1987). Value added: Measuring the community colleges' effectiveness. Review of Higher Education, 10(3), 235-245.

Widlak, P. A. (1997). Graduates who never planned to graduate": A community college's impact on student aspirations. Paper presented at the 37th Annual Forum of the Association for Institutional Research, Orlando.

Wyman, F. J. (1997). A predictive model of retention rate at regional two-year colleges. Community College Review 25 (1): 29-58.

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